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Does Pervasive Corruption Matter For Firm's Demand for Good Governance in  
Developing Countries?

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## Résumé / abstract

This paper investigates empirically the relationships between the corruption climate and the demand for good governance by focusing on firms' behaviors in developing countries. The concept of demand for good governance is conceived in terms of a firm's willingness to comply with regulatory norms measured through the firm's perception of the level of public accountability as well as the firm's behavior in terms of corruption practices. While there is a growing theoretical literature on the importance of externality mechanisms of corruption phenomena, little empirical evidences has been highlighted. This paper contributes to fill this gap by using firm-level data from the World Bank Enterprise Survey. We show that when corruption is found to be a very important constraint for a firm's business, its willingness to comply decreases and the probability of the firm's corrupting officials increases. These results support arguments according to which the demand for good governance is likely to be influenced by the perception of the existence of pervasive corruption. Moreover, the results are conditioned on countries' institutional features and the type of regulation. Some evidence is also found for firms' environmental overcompliance.

Mots clés /Key words: Corruption; Compliance; Regulation; Firms.

Codes JEL / JEL codes : A12 ; A13.

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# 1 Introduction

How to induce, promote and sustain good governance? Where to find the drivers of institutional change? In most studies on governance, priority is given to the supply side of reforms. However, to study the sustainability and success of such reforms, attention should be also paid to the demand side, notably the stakeholders' willingness to comply with regulatory norms as well as their perception of the governance quality in their environment, i.e., the accountability of public officials (Young, 1979; Zaelke et al., 2005; Odugbemi and Jacobson, 2008; Ivanyna and Shah, 2010). In this research, we focus on the perceptions of the demand side's actors about the accountability of supply side actors as well as about the corruption climate as a potential constraint for the firm's business. To what extent does the firm's perception of the degree of public accountability and the level pervasiveness of corruption shape its demand for good governance through its behaviour in terms of compliance with regulatory norms as well as in terms of corrupt practices?

Compliance is a substantial element of good governance. Increased focus on it seems to be important to enhance the success of efforts to strengthen the rule of law, which, in turn, will improve the achievement of efforts to implement good governance, and so to allow society to reach sustainable development (Zaelke et al., 2005).

By adopting the norm-based approach of corruption, we seek to understand and check empirically the importance of externality mechanisms in the pervasiveness and persistence of corruption in business. Then, we explore the links between regulation policies and stakeholder compliance with institutions or regulatory norms in a perspective of reconciliation between the supply and demand sides of governance. By focusing on the externality phenomenon in compliance behavior and, thereby, on the climate of corruption, this study faces the issue of when do firms behave normatively like a pure Homo Sociologicus or like a pure Homo Economicus.

The concept of the demand for good governance is conceived in terms of a firm's willingness to comply with regulatory norms measured through the firm's perception of the level of public accountability as well as the firm's behavior in terms of corrupt practices. This paper is then related to two strands of the literature on the demand for good governance. First, in the corruption literature, the persistence and spread of corruption is explained through the norm-based approach according to which the corrupt behavior of one firm generates externalities by making corruption more attractive for other firms (Mishra, 2006; Damania et al., 2004; Pierre-Guillaume and Weill, 2010; Leff, 1964; Huntington, 1968). Thus, the incidence and persistence of corruption is likely to increase with the number of corrupt firms in the economy. Corrupt acts are deviations from implicit or explicit behavioral norms (with or without legal and ethical connotations). However, the widespread nature of corruption in some societies tends to reinforce the idea that corrupt behavior could be the norm itself despite its harmful effects and condemnation. Explaining the widespread corrupt practices, people usually makes the straightforward argument that "if everyone fails to comply, why should I comply?"

Then, the second branch of the paper is also related to the literature on regulatory compliance

focused on how a firm's characteristics influence the willingness to comply with existing regulations, and on the effects of pervasive corruption on firms' compliance behavior (Magat and Viscusi, 1990; Deily and Gray, 1991; Laplante and Rilstone, 1996; Murphy and Stranlund, 2007). Compliance with regulations can be treated in different ways: compliance versus noncompliance, compliance level or duration of noncompliance episodes. Regulations, enforced fairly, enable businesses to compete on equal terms. The role of regulated firms' "commitment" is most evident when considering firms' perceptions of the legitimacy of the regulatory authorities, i.e., public accountability, which is influenced by the firms' views of how fairly the regulations are created, implemented, and enforced, i.e., the supply of good governance. Then, the role of spillover effects of the regulator's reputation has to be taken into account (Shimshack and Ward, 2005). If governments and regulators expect companies to respect the law and accept good regulatory standards they also need to recognize that regulators are accountable to the public and to customers. Sometimes, public institutions may be able to effectively encourage voluntary compliance to a norm by making compliance less costly.

While there is a growing theoretical literature on the importance of externality mechanisms of corruption phenomenon, to the best of our knowledge there are no empirical studies on the effects of firms' perception of the extent of endemic corruption on a firm's demand for good governance in terms of willingness to comply and corrupt behaviors. Understanding why some firms violate regulatory standards while others overcomply is central to the design of more efficient regulatory policies.

Then, this paper contributes to fill this gap by using firm-level data for 73 developing countries from the World Bank Enterprise Survey conducted in 2002–2006. First, we show that when corruption is perceived to be a very important constraint for a firm's business, its willingness to comply decreases and its probability to be involved in corruption increases. These results support arguments according to which the demand for good governance is likely to be influenced by the perception of pervasive corruption. The first result is typically in line with norms-based explanations of corruption persistence which stress that noncompliance may become an equilibrium strategy for the firm because the perception of endemic corruption leads to the depletion of its beliefs in the fairness of the legal system. The second result could be linked to economic-based explanations of corruption persistence according to which the opportunity cost of corrupt behavior decreases when corruption is spread out. Second, our results also suggest that the effects of endemic corruption are conditioned on countries' institutional features. Third, we uncover that pervasive corruption influences less firm's environmental petty corruption than other bribe payments, highlighting the firms' environmental overcompliance.

This paper is organized as follows. Section 2 presents a short literature review of compliance and corruption. Section 3 describes the data and empirical methodology. Section 4 gives the main summary results and Section 5 presents the econometric results. Section 6 concludes.

## 2 The Literature on compliance and corruption: the challenges for building good governance

The subject of compliance has been analyzed in many social sciences such as law, sociology, psychology, and political sciences. Economists trying to deal with this issue use mainly the framework of game theory by analyzing it in terms of the theory of choice and decision. It also constitutes a central concern in all discussions of “enforcement” in game theory. For [Young \(1979\)](#), compliance refers to actors’ behaviors which conform with compliance systems.

The wide literature on compliance examines it in different aspects among which are the externality mechanisms associated to compliance phenomenon including the strategic interactions among firms during their compliance decision processes. Thus, some studies try to understand the extent to which some actors generate and use expectations concerning the likely behavior of others while making their own decisions.

Other research focuses on the political economy approaches of compliance by linking the behaviors of public authorities to those of individual entities such as firms. Thus, corruption phenomena arises in the analysis of firms’ compliance with regulatory norms. Whatever their behavioral attributes or institutional characteristics, public authorities will always face opportunity costs with respect to the investment of resources in compliance mechanisms, since the total pool of available resources is finite and there are many other demands on it. Then, depending on the objectives and resources at the disposal of public authorities, various kinds of tools can be used for regulation and norm compliance promotion. From punishments to rewards depending on the compliance level, one might consider also the investments in governance infrastructures that enable voluntary compliance by individual actors or firms. In poor countries where the budgetary resources of public authorities are particularly scarce, the supervision option is likely to be inefficient while investing in strategies promoting self compliance should be appropriate.

For firms, the decision to comply or not depends on many factors among which are the evaluation of the benefits and costs of compliance and noncompliance. It is worth noting that one might make some distinction between theoretical compliance and practical compliance, otherwise between a priori and a posteriori compliance. Indeed, even those who acknowledge the authoritativeness and generally favor the existence of specific behavioral or norm prescriptions frequently find it advantageous to violate them in practice ([Young, 1979](#)).

Another aspect in the regulatory literature concerns externalities in compliance mechanisms. Therefore, institutions created to deal with compliance problems could supply positively valued collective goods such as a general atmosphere of trust. Following the arguments of some behavioral economists ([Kahneman et al., 1986](#); [Rabin, 1994](#); [Fehr and Schmidt, 2006](#); [López-Pérez, 2009](#)), increasing people’s distaste for being immoral can increase the level of immoral activities because of cognitive dissonance according to which people will feel pressure to convince themselves that immoral activ-

ities are in fact moral. Thereby, compliance follows a law of demand and people respect norms in a reciprocal manner, as they are more likely to comply if others are expected to comply too.

In the same vein, social norms can be a major determinant of the extent of corruption in society. Where norms of law-abidingness are strong, corruption is likely on balance to be lower than where norms of law-abidingness are weak. Social norms that condone corruption, in turn, undermine the rule of law by promoting disrespect for the law, and weakening law enforcement and other compliance efforts. Social values and norms that complement and support the rule of law have to be considered as part of any effort to promote good governance and rule of law (Zaelke et al., 2005). Indeed corruption is commonly defined as “behavior that deviates from formal duties because of private gains.” Nonetheless the widespread nature of corruption in some societies indicates that corrupt behavior could be conceived as the norm itself despite the fact that it is inefficient and generally condemned (Mishra, 2006).

Some authors argue that corruption at the firm level can be explained by indirect factors, such as culture or the level of rents that can be appropriated (Brunetti and Weder, 2003). For instance, the characteristics of firms that will be extorted by officials depend on the opportunities for extortion and the likelihood of punishment. Being victimized by government officials might affect the firm’s compliance with government rules (Ayyagari et al., 2010). Moreover, large firms came out as more exposed to corruption, and also better able to influence contract procedures through unethical means (Eerola, 2004). Indeed, the presence of business corruption provokes firms to make choices between legal business approaches and illegal bribery. Firms with similar ethical codes and compliance systems can respond to corruption-related challenges in very different ways. For Søreide (2009) a firm’s decision will depend partly on its attitude towards risk. Thus, risk averse firms can be more inclined to offer bribes than risk neutral and risk attracted firms. Moreover, for a firm, the propensity to be involved in corruption will depend on various characteristics such as its local or foreign ownership, location of headquarters, ownership structure, role in lobbying efforts, sector characteristics, perceived and actual capacity of government, regulatory institutions’ capacity and independence, and the perceived extent of corruption in the sector.

Perceptions of the prevalence of corruption drive a low confidence in institutions, but just as plausibly the opposite could be true: individuals who lack confidence in public institutions might as a result express the view that corruption is widespread (Clausen et al., 2009). In the same perspective various ways to approach the issue of the persistence and pervasiveness of corruption are found in the literature (Bardhan, 1997). While existing models of corruption tend to focus primarily on the costs and benefits of noncompliance, Mishra (2006) proposes to look at the costs and benefits of compliance as in many of the corrupt societies, those who comply with the law or social standards often become victims of harassment, extortion, and alleged corrupt behavior. He examines how pervasive corruption can be persistent despite the presence of anti-corruption measures and incentives. The argument is that when corruption becomes the social norm, low compliance is likely to become the

equilibrium strategy. When there are many corrupt individuals in the society, it may become optimal to be corrupt despite the presence of anti-corruption policies and incentives. Different societies with the same levels of development, judicial machinery, and politico-legal structures could exhibit varying degrees of corruption, tax evasion, and other regulatory noncompliance. This arises because different societies could get caught in different equilibria due to various forms of externalities rooted in people's perceptions and beliefs. If people expect more people to be corrupt, the expected cost of being corrupt would be less (the probability of apprehension might be low or even the social sanction against corruption could be weakened), leading to more people being corrupt.

In this paper, we support the fact that these arguments could apply to firms' behaviors in terms of corruption and compliance. Basically, in a pervasive corruption climate, many firms are likely to consider that they have to bribe or noncomply if they would like to survive in their group of reference. The empirical section aims at checking the existence of these externality mechanisms in the corruption and compliance phenomenon.

Besides, sometimes there may be discrepancies between beliefs about corruption frequency and its actual incidence. To curb administrative corruption, the government may undertake institutional reforms to improve the efficiency of the judiciary and the level of regulatory compliance. However, it is assumed that such reforms are a gradual process and necessitate investment in legal and administrative infrastructure. Yet, political instability is shown to create an environment under which corruption becomes more pervasive and tends to persist ([Damania et al., 2004](#)). With greater political uncertainty, the regulatory norms and policy are more likely to be altered by a future government who may also be constrained in its ability to enforce compliance with its chosen policy because of inheriting a weak judiciary system. Thus, this instability makes the government more receptive to lobbying. Therefore, the level of bureaucratic regulation and judicial efficiency in a country could be the main roots from which corruption becomes more endemic. For instance, regulation is associated with many adverse impacts on markets such as corruption ([Djankov et al., 2002](#); [Amin and Ranjan, 2008](#)). This way, literature focusing on inherited legal systems and investigating the trade-off between civil law and common law systems could be seen as an important factor shaping corrupt climate effects. In fact, the Legal Origins Theory of development developed by La Porta, Lopez-Silanes, Vishny and Shleifer (LLSV—several papers [La Porta et al. \(1997, 1998, 2007\)](#)) tries to explain the differences in economic and social performance using the legal origins of law and regulation. According to these authors, legal origins are defined by “the style of social control on economic life” ([La Porta et al., 2007](#)) and the style of a legal system is influenced by political institutions (legal procedures,...), ideology, broader attitudes and philosophy which depend on the historical background and so on the historical institutional framework represented by the legal origins. Then, [La Porta et al. \(1999\)](#) and [Treisman \(2000\)](#) show that common law countries have less corrupt societies, less regulated economies, and a high judicial efficiency. In turn, common law economies could be less characterized by corruption climates so that the demand for good governance provided by firms should be less influenced by the



pervasiveness of corruption, unlike the situation in civil law countries.

In addition, while looking at the specific case of corruption related to a firm's environmental compliance, different lines have been studied in the literature. Some studies have shown that large plants may be under greater enforcement pressure than smaller plants and even they are more efficient in controlling pollution or if there exist economies of scale with respect to pollution control, large firms could be less likely to be out of compliance (Magat and Viscusi, 1990; Deily and Gray, 1991).

Dasgupta (2000) and Gangadharan (2006) show that the probability of complying depends on, among other factors, the kind of management practices of the firm and the level of environmental training. In some cases, there are trade agreements that could prevent or make it very difficult for polluting firms to sell their products internationally.

Some results have also been found about the overcompliance of firms in the manufacturing sector. In fact, there is growing evidence that many firms comply with environmental regulations even when these regulations are weak or non-existent, a fact well known as the Harrington paradox (Harrington, 1988). Some firms have incentives to comply in order to avoid being moved into the frequently inspected group. Other explanations of overcompliance use the arguments of business strategy seeking to gain reputation as an environmentally conscious organization or aiming to guide regulatory authorities to set higher standards for the whole industry, thereby increasing the costs of their rivals (Heyes, 2005; Decker and Pope, 2005; Mohr, 2006; Denicolo, 2008; Wu, 2009). As shown in Shimshack and Ward (2005), the reputations of government and regulators for making credible enforcement policies significantly increases firms' statutory overcompliance with regulations as well.

### 3 Data and empirical methodology

#### 3.1 Data and variables

##### 3.1.1 Presentation of the Enterprise Survey

Our data come from the World Bank Enterprise Survey (ES) that uses standardized survey instruments to study firm behavior as well as performance, and to analyze the investment climate of enterprises across the world. ES collects information "about the business environment, how it is perceived by individual firms, how it changes over time, and about the various constraints to firm performance and growth."

The purpose of this survey is to advise governments (local and national) on ways to change policies that hinder private establishments and to develop new policies and programs that support productivity growth.

We use data for several countries which have been matched to a standard set of questions. More precisely, the survey sample covers registered businesses in each country, uses standardized survey instruments and follows a stratified random sampling methodology. Furthermore, ES implies that data

consists of pooled cross-sections (here firms) over time hence there is no replicability<sup>1</sup>.

All the surveys in our sample represents 71,789 firms surveyed during 2002–2006. For the purpose of our study, only enterprises located in low and low-middle income countries are used and we exclude all firms in the service sector. Finally, our dataset represents 33,076 firms in 73 countries with main activities in manufacturing, agro-industry and construction (see Table 8, page 27 for the list of countries)<sup>2</sup>.

In this study we analyze relationships between the corruption climate and the demand for good governance conceived through a firm's willingness to comply with norms and a firm's bribe payments to public officials. The ES surveys make this analysis suitable for investigating the relation between the demand for good governance and the existence of pervasive corruption. In fact, the surveys contain information on illegal activities such petty corruption (bribe payments by firms to public officials) and the firm's perception of the impact of endemic corruption on its business.

Information on the corruption climate helps us to study the persistence of noncompliance and so corrupt activities (the higher is endemic corruption, the lower could be the firm's willingness to comply and the higher would be the firm's willingness to corrupt in order to maintain its activities). In the following part, we present our two measures of a firm's demand for good governance, i.e., a firm's willingness to comply and a firm's petty corruption, measuring the practical demand for good governance, as well as the corruption climate.

### 3.1.2 Main interested variables

In this paper, we try to understand how endemic corruption could affect a firm's demand for good governance. However, the concept of demand for good governance is not straightforward to analyze. The degree of public officials' accountability represents more directly the concept of demand for good governance. In fact, the higher is the accountability, and the higher are the citizens' interests in good governance practices, the higher will be their demand for good governance to suppliers, i.e., public officials. However, in this paper, we assume that the concept of good governance could be extended in two ways. First, a firm's willingness to comply with regulatory norms deduced from their perception of public's officials accountability could represent a part of the firm's demand for good governance. In turn, this willingness can be viewed as a signal sent to public official by firms to demand more good governance. Second, we take into account the firm's behavior concerning corrupt activities. The higher will be these practices, the lower should be the firm's demand for good governance reforms.

In the following part, we describe how we have constructed these two variables (see Table 10, page 29 for descriptive statistics of all variable across countries and firms).

<sup>1</sup>More precisely, some of the countries are surveyed in multiple years but during each year a new random sample is taken from the relevant population.

<sup>2</sup>The number of countries varies depending on the dependent variable used and the sample used.

**Willingness to comply** Unfortunately, there is no direct information on the willingness to comply with regulatory norms in the ES. Hence, a variable of compliance has to be created from information provided by the ES. Given that compliance could be defined as the degree of appropriation of the legal system, we use two questions on the perception by the firm of the level of accountability of public officials. Put differently, a firm's perception of the degree of public officials' accountability determines the degree of demand for good governance of the firm which in turn affects its willingness to comply. More precisely, the two questions are (i) the consistency and predictability of government officials' interpretation of regulations and (ii) the efficiency of the legal system to resolve disputes. More precisely, the questions used are:

- *In general, government officials' interpretations of regulations affecting my establishment are consistent and predictable. To what extent do you agree with this statement?* 1. Fully disagree to 6. Fully agree.
- *I am confident that the judicial system will enforce my contractual and property rights in business disputes. To what degree do you agree with this statement?* 1. Fully disagree to 6. Fully agree.

The variable of compliance is a dummy created as follows: 0 if the firm responds between 1 and 3 in both previous questions and 1 if the response is at least 4 in one of the two questions. For instance, since a firm responds that it has a high level of confidence in the consistency of government officials' interpretations of regulations, it will be considered *a priori* as compliant even if it has a low level of confidence in the judicial system (Responses 1 to 3 in the second question).

**Petty corruption (Bribe)** An issue studied in this paper concerns the role of corruption climate on petty corruption (bribes paid by firms to public officials). As a measure of bribe payments we construct a variable, **Bribes**, which are a firm's response to the question: “*During inspections and mandatory meetings with officials of agencies in the context of regulation of your business, was gift or informal payment ever expected/requested?* 1=NO; 2=YES”<sup>3</sup>.

While this is a general variable proxying for the extent of petty corruption of a firm, we use also the response concerning each regulation, i.e., bribes paid to fiscal, labor, safety, sanitation and environmental government agencies. This information allows us to highlight the special case of firm's environmental bribe payments.

**Corruption climate:** To measure the explanatory variable of interest, i.e., the corruption climate, we build a categorical variable which are responses to the question: *Please tell us if corruption was a*

<sup>3</sup>In the survey, the question concerns the following agencies: Tax Inspectorate, Labor and Social Security, Fire and Building Safety, Sanitation/Epidemiology, Municipal Police and Environmental. We create a dummy with 1 if the firm reports to have bribed an agent at least once regardless of the type of agency.

problem for the operation and growth of your business. If it poses a problem, please judge its severity as an obstacle on a four-point scale where: 0 = No obstacle; 1 = Minor obstacle; 2 = Moderate obstacle; 3 = Major obstacle; 4 = Very Severe Obstacle.. This categorical variable allows us to assess a nonlinear effect of corruption pervasiveness on a firm's demand for good governance.

## 3.2 Empirical methodology

In this section we investigate empirical issues of this paper: could corruption climate influence (i) a firm's willingness to comply; (ii) a firm's practical compliance, i.e., petty corruption ?

Moreover, since our dependent variables (*Compliance*, *Bribe*) are qualitative binary response variables, we use a logit specification with country, industry and year fixed effects. For each of the following regressions, observations are clustered by countries to avoid spatial correlations.

### 3.2.1 Basic equation

First, we examine whether the corruption climate affecting the business environment of firms could influence their willingness to comply and their corrupt activities. In order to highlight the potential nonlinearity of endemic corruption, we use all dimensions of the variable of pervasive corruption (corruption climate) divided into five parts: No Obstacle (the reference), Minor Obstacle, Moderate Obstacle, Major Obstacle, Very Severe Obstacle.

Also, the question of the endogeneity of corruption climate could occur. In fact, the level of compliance or corruption of the firm could influence the level of corruption in an economy only if this enterprise is a dominant actor. To deal with this issue, we introduce a control variable concerning the share of national market held by each firm. Hence, for firm  $i$  in industry  $j$  and in country  $k$ , we run the following regression:

$$\begin{aligned} Compliance_{i,j,k} / Bribe_{i,j,k} = & \alpha_0 + \alpha_1 MinorCorrupt_{i,j,k} + \alpha_2 ModerateCorrupt_{i,j,k} \\ & + \alpha_3 MajorCorrupt_{i,j,k} + \alpha_4 SevereCorrupt_{i,j,k} + \sum \alpha_k X_{i,j,k}^k \quad (1) \\ & + \alpha_5 I_j + \alpha_6 C_k + \alpha_7 YearsDummies + \varepsilon_{i,j,k} \end{aligned}$$

where  $I_j$  and  $C_k$  are, respectively, industry and country fixed effects, with  $j = 1, \dots, 4$  and  $k = 1, \dots, 5$ <sup>4</sup>. *Compliance* is the firm's willingness to comply and *Bribe* represents the firm's petty corruption or its practical compliance.  $X$  are the following firm's features: part of the national market held by the firm, membership of a business association, firm's size, exporter status, ownership status, education of the manager, legal status, year of beginning of business and capacity utilization over the

<sup>4</sup>The four industry sectors are Textile, Forestry, Agro-industry and Other Manufacturing firms. The number of countries changes according the regressions (43 countries with all controls firm's features).

last year<sup>5</sup>.

### 3.2.2 Conditional effect and heterogeneities

Effects of the corruption climate on a firm's demand for good governance, i.e., its level of compliance with regulations, could be conditioned by (i) the country's institutional features and (iii) the field of regulation.

**Country's institutional framework** As we have shown earlier, an issue in the literature is the role of the institutional framework in a country on corrupt activities and the willingness to comply. To deal with this issue, Equation 1 is run under each of the following sub-samples: i) unstable and stable regimes; ii) low and high government effectiveness; iii) low and high judicial efficiency and iv) common law and civil law countries.

For the variable of regime stability, we use an index of Political Stability which measures “perceptions of the likelihood that the government in power will be destabilized or overthrown by possibly unconstitutional and/or violent means” averaged over 2000–2006 and provided by the Worldwide Government Indicators (WGI) of the World Bank (all scores lie between –2.5 and 2.5, with higher scores corresponding to better outcomes.). The Government Effectiveness index from WGI capturing “perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies” is used (from -2.5 (low) to 2.5 (high), averaged over 2000–2006). For judicial efficiency, the Rule of Law index from WGI “capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence” is introduced (from -2.5 (low) to 2.5 (high), averaged over 2000–2006). We also use data on Legal Origins divided between English common law and French civil law and provided by (La Porta et al., 2007).

**Environmental issue** The role of the corruption climate on a firm's demand for good governance takes a particular importance in the environmental field. More precisely, while looking at the specific case of corruption related to a firm's environmental compliance, we try to analyse evidences which are found about the environmental overcompliance of firms in the manufacturing sector.

In order to analyze this issue, we estimate the effects of the corruption climate on bribe payments in different regulations by regressing Equation 1 on bribe payments in the five following regulations: environmental, fiscal, labor, fire/building safety and sanitary.

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<sup>5</sup>Capacity utilization is defined as “the amount of output actually produced relative to the maximum amount that could be produced with (the) existing machinery and equipment and regular shifts” in the survey.

## 4 Main descriptive statistics

### 4.1 Summary statistics

We begin with a short presentation of the summary statistics of the main variables. Table 1 reports information on the firm's features (geographic location, ownership status, legal status, exporter status and firm's size) by industry (textiles and garments, agro-industry and food, wood and paper and other manufacturing firms (mainly metal and machinery, chemicals and pharmaceuticals, electronics, non-metallic and plastic materials and construction)).

Table 1: Firm's Features across Industries

	Industry				Total	# of firms
	Textile	Agroindust.	Wood	Other		
	and Garments	and Food	and Paper			
	%	%	%	%	%	
<b>Panel A: Geographic Location</b>						
Sub-Saharan Africa	7.4	18.4	37.9	11.2	13.9	5 171
East Asia and Pacific	25.8	18.2	19.1	31.2	26.2	9 751
Europe and Central Asia	8.2	20.4	14.4	16.6	14.9	5 527
Latin America and the Caribbean	26.2	26.1	23.4	21.8	24.0	8 913
Middle East and North Africa	13.2	7.7	5.2	9.5	9.8	3 647
South Asia	19.2	9.2	0.0	9.6	11.3	4 190
<b>Panel B: Ownership</b>						
Foreign	11.9	12.1	8.4	13.8	12.5	4 589
Domestic	88.1	87.9	91.6	86.2	87.5	32 196
<b>Panel C: Legal Status</b>						
Publicly listed company	6.9	9.8	7.2	8.4	8.1	2 060
Privately held, limited company	43.7	37.1	41.9	42.5	41.8	10 572
Cooperative	4.6	3.0	2.3	5.1	4.3	1 088
Sole proprietorship	20.4	26.0	27.0	14.4	19.4	4 911
Partnership	12.2	12.4	10.6	11.4	11.7	2 971
Other	12.1	11.7	11.0	18.2	14.6	3 692
<b>Panel D: Exporter Status</b>						
Exporter	34.4	19.1	18.3	19.4	23.3	8 464
Non-exporter	65.6	80.9	81.7	80.6	76.7	27 858
<b>Panel E: Firm Sizes</b>						
Small(<20)	29.4	37.0	49.1	33.4	34.4	11 381
Medium(20-99)	35.9	36.7	35.9	38.1	37.0	12 243
Large(100 and over)	34.7	26.2	15.0	28.6	28.6	9 452
<b>Total</b>	8 995	6 542	2 945	14 594	33 076	

Authors' Calculations

Panel A presents statistics across different regions. In the sample, 26 percent of firms are located in East Asia and Pacific, 24 percent in Latin America and the Caribbean, 15 percent in Europe and

Central Asia, 14 percent in Sub-Saharan Africa and 10 percent in the Middle East and North Africa. Moreover, significant heterogeneities by industry can be noticed. For instance, 38 percent of the firms in forestry are located in Sub-Saharan Africa.

Panel B presents information on the firm's ownership status. Col. 6 of Panel B shows that the firms are mainly domestic (87.5 percent). Besides, forestry is the more domestic sector (only 8.4 percent of firms held by foreigners) whereas agro-industry and textiles are more held by foreigners (respectively 12.1 percent and 11.9 percent). Panel C reports statistics on the firm's legal status. Firms are mainly privately held companies (41.8 percent of all sample) with small heterogeneities between industry.

Panel D gives information on exporter status. More than one third of firms in the industry of textile are exporter (34.2 percent in col. 2). In forestry, firms are mainly oriented toward the domestic market (only 18.3 of firms are exporters). Lastly, Panel E provides statistics on firm size. Col. 6 shows that the sample is fairly distributed: small firms (less than 20 employees), medium (between 20 and 99 employees) and big ones (more than 99 employees) represent on average respectively 34.4, 37.0 and 28.6 percent of the sample.

## **4.2 Firm's willingness to comply, firm's petty corruption, and corruption climate across countries and firms**

### **4.2.1 Firm's compliance and firm's petty corruption**

Table 2 reports statistics on the average percentage of firms which are willing to comply with regulatory norms and which are bribe-givers across different country institutional classifications (Panel A to Panel E) and different firm categories (Panel F to Panel J).

**Across countries:** First, col. 2 of Panel A shows that the average willingness to comply is high across all countries ranging from 61.7 percent (of firms) in Latin American and Caribbean countries to 82.6 percent in East Asian countries and 83.4 percent in North Africa. Col. 3 of Panel A reports the average bribe payments, which range from 8.6 percent (of firms) in Latin American and Caribbean countries to 60.4 percent of firms in East Asian countries.

Second, Panels B to E show the distribution of firms depending on the level of political stability, government effectiveness, judicial efficiency and legal origins. In Panel B, we focus on Political Stability indicator, which ranges from -2.55 (Democratic Republic of the Congo) to 0.92 (Cape Verde) with a median value which varies depending on the sample<sup>6</sup>. Hence, countries are classified into high and low political stability depending on whether the average index of political stability in each country is respectively above or below the median value. We find that the less unstable countries have a higher percentage of firms which are more willing to comply, and a lower percentage of firms which are bribe

<sup>6</sup>For instance, concerning compliance, the median value is 0.74 whereas it is 0.56 for petty corruption. The differences are due to sample size.



givers, whatever the type of corrupt activities.

Table 2: Compliance and Bribe Across Countries

The variables are described as follows: *Compliance* is the percentage of firms which are willing to comply; *Bribes* is the percentage of firm which have bribed, at least one time, an official. *Environmental* and *Fiscal* represent the percentage of firms which have bribed, respectively, for environmental and fiscal purposes.

Firm's Demand for Good Governance	Theoretical	Practical: Petty Corruption		
	Compliance	Bribe	Environmental	Fiscal
<b>Panel A: Geographic Regions</b>				
Sub-Saharan Africa	73.1	20.9	4.00	2.07
East Asia and Pacific	82.6	60.4	24.2	4.23
Europe and Central Asia	66.5	60.2	37.9	4.94
Latin America and the Caribbean	61.7	08.6	3.80	7.7
Middle and North Africa	83.4	36.6	22.1	3.16
South Asia	78.1	59.9	71.6	6.12
<b>Panel B: Level of Political Stability</b>				
Unstable	75.8	42.4	31.7	38.2
Stable	70.2	39.1	26.3	29.8
<b>Panel C: Government Effectiveness</b>				
Low	66.6	42.9	35.2	39.0
High	79.4	39.0	23.3	28.4
<b>Panel D: Rule of Law</b>				
Low	69.2	43.0	32.6	35.9
High	80.6	15.7	18.5	30.3
<b>Panel E: Legal Origins</b>				
Common Law	79.8	13.8	35.5	38.9
Civil Law	67.3	10.0	7.4	14.5
Authors' Calculations				

Third, in Panel C, we focus on government effectiveness, which ranges from -1.61 (Democratic Republic of the Congo) to 0.75 (South Africa) with a different median value according to sample. We find that countries with low government effectiveness have a lower percentage of firms which are more willing to comply, and a higher percentage of firms which are bribe givers than countries with strong government effectiveness (whatever the type of corrupt activities).

Fourth, in Panel D, we focus on judicial efficiency measured with the Rule of Law index ranging from -1.24 (Georgia) to 0.23 (Uganda) with a different median value according to sample. We uncover that countries with weaken judicial efficiency have a lower percentage of firms which are more willing to comply, and a higher percentage of firms which are bribe givers (whatever the type of corrupt activities) than countries with strong judicial efficiency.

Fifth, in Panel E, we present statistics on the firm's demand for good governance belonging to legal origins on law and regulations. We find that common law countries have a higher percentage of firms which are more willing to comply than in civil law countries. Differently, civil law countries have a



lower percentage of petty corruption compared to common law countries. These results suggest that the legal tradition of law and regulations could influence differently the demand for good governance.

**Across firms:** In Panels A to E of Table 3, we analyze the average of the percentage of firms which are compliant and which are bribe givers.

Table 3: Compliance and Bribe Across Firms

The variables are described as follows: *Compliance* is the percentage of firms which are willing to comply; *Bribes* is the percentage of firm which have bribed, at least one time, an official. *Environmental* and *Fiscal* represent the percentage of firms which have bribed, respectively, for environmental and fiscal purposes.

Firm's Demand for Good Governance	Theoretical Compliance	Bribe	Practical: Petty Corruption	
			Environmental	Fiscal
<b>Panel A: Firm sizes</b>				
Small(<20)	68.2	36.2	28.8	30.1
Medium(20-99)	70.3	37.7	28.0	31.3
Large(100 and over)	77.0	44.4	31.2	31.9
<i>Total</i>	20 589	19 700	5 601	16 768
<b>Panel B: Ownership</b>				
Foreign	73.0	41.3	26.3	27.6
Domestic	72.7	40.7	29.4	35.1
<i>Total</i>	23 040	22 767	9 097	19 321
<b>Panel C: Exporter Status</b>				
Exporter	74.7	41.2	27.9	32.8
Non-exporter	72.2	40.5	29.4	34.2
<b>Total</b>	22 697	22 521	9 023	19 131
<b>Panel D: Legal Status</b>				
Publicly listed company	73.1	29.8	22.0	25.6
Privately held, limited company	71.1	38.3	25.1	31.6
Cooperative	65.8	74.3	42.0	51.9
Sole proprietors	69.7	49.3	36.3	46.3
Partnership	72.0	55.6	37.6	46.5
Other	76.2	49.8	22.5	31.1
<b>Total</b>	18 819	16 706	9 014	13 721
<b>Panel E: Industry Sector</b>				
Textiles and Garments	73.3	42.3	29.4	36.0
Agroindust. and Food	69.8	35.0	28.9	31.9
Wood and Paper	69.4	31.3	19.6	29.1
Other	74.9	44.6	31.2	35.0
<b>Total</b>	23 376	23 014	9 112	19 530
Authors' Calculations				

First, in Panel A, we show that large firms are more likely to comply (77.1 percent) than other firms while they are more likely to be bribe givers (44.4 percent).

Second, firm ownership categories (Panel B) seem to not matter for the level of compliance and petty corruption. However we can notice that domestic enterprises are more inclined to corrupt environmental and fiscal officials than foreign firms. Third, in Panel D, we focus on legal status. We show that publicly listed companies are less likely to be bribe givers (29.8 percent) and are more willing to comply (73.1 percent) than privately held firms (38.3 and 71.1 percent for bribe payments and compliance, respectively).

Last, when we look at industry in panel E, we find that forestry firms are less willing to comply with regulation (69.4 percent) but finally these firms are less likely to be bribe givers (31.3 percent). We find that only 19.6 percent of forestry firms have corrupted an official in charge of environmental regulation whereas in agro-industry, textile and other manufacturing firms 28.9, 29.4 and 31.2 percent, respectively, of firms are bribe givers.

#### 4.2.2 Corruption climate across countries and firms

Table 4 reports the proportion of firms which consider that the corruption climate is i) not an obstacle, ii) a minor obstacle, iii) a moderate obstacle, iv) a major obstacle and v) a very severe obstacle for their businesses.

First, in Panel A (col. 2), we find that the majority of firms considering that the corruption climate is not an obstacle for their business are located in Sub-Saharan Africa, or Latin America and Caribbean countries (53.8 and 51.3 percent). However, these firms represent only 24.1, 34.5, 38.8 percent in South Asia, Europe and Central Asia, and East Asia respectively. Moreover, firms considering corruption pervasiveness as a very severe obstacle for their activities are 14.5 percent in Sub-Saharan Africa, 22.1 percent in Latin America, and 22.5 percent in South Asia (the second largest category of firms in these three areas). Basically, firms thinking that corruption climate is at least a major constraint are more than 40 percent in South Asia, 36 percent in Sub-Saharan Africa, a third in Latin America, 26 percent in East Asia, and 24 percent in Europe and Central Asia.

Second, in Panels B and C, we focus on how corruption climate depends on the level of political stability, government effectiveness, rule of law, and legal origin of law and regulations. We find that corruption seems to have more severe impacts on a firm's business in unstable regimes (Panel B, col. 6), weak government effectiveness (Panel C, col. 6), and low judicial efficiency (Panel D, col. 6). However, there is no linearity: firms reporting corruption climate as being not an obstacle are mainly located in these previous countries. Concerning the effects of legal origins, we find that firms considering corruption pervasiveness as a major constraint are mainly located in civil law countries (21.7 percent) but alternatively, firms conceiving corruption climate as being not an impediment are mainly in civil law countries.

Third, we find that corruption is perceived as having a more severe impact in medium size enterprises (Panel D, col. 2), domestic ones (Panel E, col. 7), non-exporters (Panel F, col. 9), organized in cooperative (Panel G, col. 6), and in forestry (Panel H, col. 11).

Table 4: Corruption Climate Across Countries and Firms

The perception of the Pervasiveness of Corruption for Firm's Businesses						
Across Countries	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle	Very Severe Obstacle	# of Countries
Panel A: Geographic Regions						
Sub-Saharan Africa	53.8	9.6	9.8	12.2	14.5	26
East Asia and Pacific	38.8	17.6	16.2	14.6	12.8	9
Europe and Central Asia	34.5	21.6	19.2	23.5	1.2	20
Latin America and the Caribbean	51.3	8.1	7.5	11.1	22.1	13
South Asia	24.1	15.1	20.1	18.2	22.5	3
Panel B: Level of Political Stability						
Unstable	43.8	11.9	13.8	14.6	15.8	30
Stable	42.4	14.8	13.1	14.4	15.3	47
Panel C: Government Effectiveness						
Low	43.2	12.3	12.5	15.1	17.0	47
High	41.9	15.0	14.8	14.1	14.2	27
Panel D: Rule of Law						
Low	46.3	12.0	10.5	14.4	16.7	33
High	40.9	14.2	14.9	14.7	15.2	41
Panel E: Legal Origins						
Common Law	38.3	13.8	16.3	14.6	17.1	13
Civil Law	44.8	10.0	9.9	13.6	21.7	22
Across Firms	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle	Very Severe Obstacle	# of Firms
Panel F: Firm sizes						
Small(<20)	49.2	11.4	10.7	13.4	15.4	10 867
Medium(20-99)	42.0	13.4	12.9	14.8	16.9	11 275
Large(100 and over)	37.3	15.9	16.4	15.8	14.5	8 342
Panel G: Ownership Status						
Foreign	42.0	16.2	14.3	15.4	12.0	4 175
Domestic	43.2	13.0	13.3	14.4	16.1	29 855
Panel H: Exporter Status						
Exporter	40.3	15.3	14.7	14.9	14.9	7 987
Non-exporter	44.0	12.9	13.0	14.4	15.7	25 704
Panel I: Legal Status						
Publicly listed company	30.8	13.4	17.3	17.2	21.3	1 843
Private held, limited company	27.3	15.6	17.2	18.7	21.2	9 760
Cooperative	25.8	13.6	12.0	17.8	30.8	766
Sole proprietorship	31.4	14.7	15.9	20.0	17.9	4 663
Partnership	31.1	16.1	19.0	18.7	15.1	2 818
Other	33.4	19.4	17.9	16.9	12.4	2 888
Panel J: Industry Sector						
Textiles and Garments	38.5	12.1	14.2	15.7	19.5	9 498
Agroindust. and Food	47.9	13.0	12.8	13.6	12.7	6 697
Wood and Paper	39.0	12.1	12.6	15.6	20.8	3 137
Other	44.6	14.9	13.4	13.9	13.2	15 073
Authors' Calculations						

## 5 Econometric results

### 5.1 Does endemic corruption influence firm's willingness to comply?

In this part, we show results concerning the following issue: is a firm's willingness to comply influenced by the perception of the impact on the firm's business of the degree of the pervasiveness of corruption? As shown in Section 2, there is a substantial literature on the willingness to comply and a corruption climate based on norms explanations of corruption persistence. This literature stresses that noncompliance may become an equilibrium strategy for the firm because the perception of this endemic corruption leads to a weakening of its confidence in the fairness of the legal system. Moreover, these relationships could be shaped by other features linked to the legal environment such as political stability, the degree of government effectiveness, judicial efficiency, or legal origins on law and regulations<sup>7</sup>.

In the first two columns of the Table 5, we present results without these heterogeneous effects. We find that the corruption climate influences a firm's willingness to comply. Controlling for the firm's attributes (col. 2), we show that a firm conceiving that endemic corruption is not an obstacle for its business has a probability of about 82 percent to comply with regulatory norms whereas a firm considering endemic corruption as being a very severe impediment is less likely to comply with regulations (67 percent). This result shows the fact that in a more corrupt environment, firms are less inclined to comply since their beliefs in the fairness of the legal system are weakened by this endemic corruption.

Moreover, we find that in more unstable regimes, a firm is more likely to comply than in a stable regime whatever the perception of the impact of endemic corruption. We also uncover that firms considering endemic corruption as a very severe impediment, have a low propensity to comply in a stable regime (66 percent), unlike the same firm in a unstable regime (72 percent).

However, our results suggest an important influence of government effectiveness. In fact, in col. 3 to col. 4, we find that a firm's willingness to comply is more significant in a country with high government effectiveness whatever the influence of the pervasiveness of corruption. For instance, a firm in a country with low government effectiveness and which considers the corruption climate as being a very severe impediment has a propensity of about 62 percent to comply whereas the same sort of firm (all things being equal) has a propensity to comply of about 73 percent in a country with high government effectiveness. Moreover, in col. 5 and col. 6, we find that judicial efficiency seems to condition corruption climate effects on a firm's theoretical demand for good governance. In fact, despite the severe impact of the corruption climate on their businesses, firms in a high judicial efficiency country are more likely to comply (74.1 percent), unlike the same firms in a low judicial efficiency country (66.9 percent).

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<sup>7</sup>In all tables of results, estimated coefficients and estimated probabilities are presented. In the interpretation, we focus only on probabilities.

Table 5: Firm's Compliance, Corruption Climate and Effects of Countries's Institutional Features

Depend. Variable: The Willingness to Comply	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Independ. Var.: Corruption Climate	All Sample		Political Stability Unstable	Stable	Government Effectiveness Low	High	Rule of Law Low	High	Legal Origins Common Law	Civil Law
<b>Estimate Coefficients</b>										
Minor Obstacle	-.099 (0.077)	-.042 (0.116)	-.028 (0.164)	-.064 (0.164)	0.004 (0.162)	-.117 (0.167)	0.101 (0.136)	-.122 (0.265)	-.130 (0.193)	0.147 (0.175)
Moderate Obstacle	-.365*** (0.101)	-.085 (0.109)	0.032 (0.119)	-.179 (0.169)	-.180 (0.138)	-.014 (0.175)	-.084 (0.119)	0.065 (0.256)	-.086 (0.217)	0.09 (0.167)
Severe Obstacle	-.698*** (0.113)	-.502*** (0.128)	-.530*** (0.167)	-.521*** (0.188)	-.693*** (0.191)	-.312** (0.145)	-.447** (0.179)	-.349** (0.159)	-.605*** (0.164)	-.359* (0.215)
Very Severe Obstacle	-.826*** (0.121)	-.696*** (0.109)	-.629*** (0.189)	-.763*** (0.146)	-.686*** (0.193)	-.732*** (0.146)	-.589*** (0.154)	-.687*** (0.204)	-.658*** (0.178)	-.561*** (0.166)
Constant	1.312*** (0.12)	2.525 (2.767)	1.323 (5.054)	3.646 (3.191)	5.655 (5.190)	-.547 (3.242)	1.783 (4.509)	-.382 (4.019)	-9.577** (4.481)	4.080 (4.607)
<b>Estimate Probabilities</b>										
No Obstacle	0.821*** (0.0109)	0.813*** (0.0124)	0.830*** (0.0152)	0.804*** (0.0191)	0.766*** (0.0244)	0.848*** (0.0137)	0.785*** (0.0179)	0.851*** (0.0203)	0.883*** (0.0120)	0.709*** (0.0283)
Minor Obstacle	0.806*** (0.00860)	0.806*** (0.0101)	0.826*** (0.0167)	0.794*** (0.0131)	0.767*** (0.0170)	0.832*** (0.0103)	0.801*** (0.0124)	0.835*** (0.0176)	0.869*** (0.0168)	0.738*** (0.0136)
Moderate Obstacle	0.761*** (0.00757)	0.800*** (0.00960)	0.834*** (0.0106)	0.774*** (0.0145)	0.732*** (0.0152)	0.846*** (0.0124)	0.770*** (0.0137)	0.859*** (0.0134)	0.873*** (0.0146)	0.727*** (0.0160)
Severe Obstacle	0.695*** (0.00972)	0.724*** (0.0128)	0.742*** (0.0161)	0.709*** (0.0193)	0.621*** (0.0181)	0.803*** (0.0135)	0.700*** (0.0209)	0.801*** (0.00598)	0.804*** (0.0161)	0.630*** (0.0211)
Very Severe Obstacle	0.667*** (0.0125)	0.684*** (0.00896)	0.722*** (0.0203)	0.657*** (0.00829)	0.623*** (0.0156)	0.729*** (0.0112)	0.669*** (0.0140)	0.741*** (0.0112)	0.796*** (0.0134)	0.582*** (0.0105)
Control for Enterprise's Features	no	yes	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	22 619	7 989	3 273	4 716	3 339	4 448	4 236	2 882	2 689	3 335
Log-Likelihood	-11 815.5	-4 140.8	-1 601.3	-2 530.2	-1 915.8	-2 091.8	-2 257.0	-1 358.1	-1 127.7	-2 039.7
# Countries	54	43	18	25	28	13	20	7	9	12

Control for industry, country and time fixed effects. Observations clustered by countries. Robust Standard Errors in parentheses.

Firm's Features: size, ownership, export., legal status, educ. of manager, part of the national market, memb. of a business assoc., potential of product. and firm's experience.

Then, in col. 8 and col. 7, we study the role of legal origins on law and regulation on corruption climate effects. In the literature, it is worth noting that in common law countries, the quality of bureaucracy and judicial efficiency are found to be better for improving economic activities than French civil law. We find that in common law countries, firms are more inclined to comply whatever the level of corruption climate. Hence, legal origins on law and regulations may shape the influences of the pervasiveness of corruption on firm's willingness to comply and so on the level of demand for good governance delivered by citizens to public officials.

## **5.2 Does endemic corruption influence firm's petty corruption?**

In this part, we present results concerning the following issue: is a firm's bribe payments to officials influenced by the degree of the perception of the impact of the pervasiveness of corruption on that firm's business? In fact, as stressed in the literature, it may be more suitable for a firm to bribe in a context of a high impact corruption climate: corrupt activities may become a rational economic strategy for a firm to reduce its transaction costs. In addition, these relationships could be shaped by other features linked to the legal environment such as political stability, the degree of government effectiveness, judicial efficiency, or legal origins on law and regulations.

In the first two columns of the Table 6, we present results without these heterogeneous effects. Controlling for firm's attributes (col. 2), we show that a firm which considers endemic corruption to not be an obstacle for its business has a propensity to bribe of about 9 percent whereas a firm experiencing severe effects of the corruption climate has a propensity of about 29 percent. This result suggests that in a more corrupt environment, firms will be more likely to bribe officials given that the expected cost of being corrupt would be low (the probability to be detected might be low as well as the social sanction against corruption).

Then, our results suggest that political stability seems to influence the effects of endemic corruption on firm's willingness to bribe. In fact, in more unstable regimes, the firm's bribe payments are more likely to occur whatever the level of pervasive corruption (22 percent for no obstacle in unstable regimes against only about 2 percent for no obstacle in stable regimes). However, the influence of the pervasiveness of corruption on the firm's petty corruption is stronger in unstable political regime. Indeed in more unstable regimes, a firm severely influenced by endemic corruption has a propensity to bribe of about 56 percent while the same firm in a stable country has a propensity to bribe of about 11 percent.

Table 6: Firm's Bribe Payments, Corruption Climate and Effects of Countries's Institutional Features

Depend. Variable: Petty Corruption	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Independ. Var.: Corruption Climate	All Sample		Political Stability		Government Effectiveness		Rule of Law		Legal Origins	
			Unstable	Stable	Low	High	Low	High	Common Law	Civil Law
<b>Estimate Coefficients</b>										
Minor Obstacle	0.734*** (0.114)	0.4*** (0.135)	0.339** (0.144)	0.622** (0.312)	0.316 (0.2)	0.439** (0.184)	0.294* (0.155)	0.14 (0.123)	0.082 (0.131)	0.3** (0.143)
Moderate Obstacle	1.014*** (0.115)	0.874*** (0.223)	0.799*** (0.26)	1.098*** (0.342)	1.200*** (0.307)	0.679*** (0.217)	0.955*** (0.291)	0.436** (0.198)	0.351 (0.215)	1.099*** (0.257)
Severe Obstacle	1.219*** (0.121)	1.066*** (0.181)	0.867*** (0.204)	1.517*** (0.295)	1.172*** (0.268)	1.037*** (0.221)	0.966*** (0.237)	0.889*** (0.185)	0.569*** (0.195)	1.185*** (0.192)
Very Severe Obstacle	1.383*** (0.146)	1.436*** (0.19)	1.458*** (0.233)	1.550*** (0.305)	1.637*** (0.269)	1.291*** (0.241)	1.603*** (0.206)	0.923*** (0.161)	1.233*** (0.275)	1.473*** (0.174)
Constant	-1.941*** (0.049)	-10.443* (5.523)	-18.252** (7.714)	-1.432 (5.710)	-17.577* (9.084)	-6.065 (7.465)	-16.072* (8.298)	-1.187 (6.394)	-21.027*** (7.348)	-.223 (6.759)
<b>Estimate Probabilities</b>										
No Obstacle	0.169*** (0.0100)	0.0883*** (0.0103)	0.229*** (0.0229)	0.0246*** (0.00631)	0.149*** (0.0245)	0.0609*** (0.00780)	0.136*** (0.0187)	0.0770*** (0.00745)	0.163*** (0.0170)	0.0564*** (0.00747)
Minor Obstacle	0.297*** (0.0125)	0.126*** (0.00988)	0.294*** (0.0245)	0.0448*** (0.00655)	0.193*** (0.0229)	0.0914*** (0.00776)	0.174*** (0.0170)	0.0875*** (0.00811)	0.175*** (0.0180)	0.0746*** (0.00910)
Moderate Obstacle	0.359*** (0.0113)	0.188*** (0.0179)	0.398*** (0.0364)	0.0702*** (0.00760)	0.367*** (0.0349)	0.113*** (0.0122)	0.290*** (0.0335)	0.114*** (0.0109)	0.217*** (0.0201)	0.152*** (0.0162)
Severe Obstacle	0.407*** (0.0144)	0.219*** (0.0164)	0.414*** (0.0273)	0.103*** (0.00782)	0.361*** (0.0256)	0.155*** (0.0206)	0.292*** (0.0241)	0.169*** (0.0176)	0.256*** (0.0257)	0.163*** (0.0197)
Very Severe Obstacle	0.447*** (0.0214)	0.289*** (0.0187)	0.561*** (0.0367)	0.106*** (0.00547)	0.473*** (0.0338)	0.191*** (0.0210)	0.438*** (0.0260)	0.173*** (0.0101)	0.401*** (0.0411)	0.207*** (0.0155)
Control for Enterprise's Features	no	yes	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	20 697	4 998	2 582	2 416	1 939	3 050	2 126	2 252	1 772	2 457
Log-Likelihood	-9 738.184	-1 962.058	-1 208.557	-730.917	-871.938	-1 062.241	-992.453	-738.047	-665.427	-965.081
# Countries	66	39	23	16	23	15	16	8	8	11

Control for industry, country and time fixed effects. Observations clustered by countries. Robust Standard Errors in parentheses.

Firm's Features: size, ownership, export., legal status, educ. of manager, part of the national market, memb. of a business assoc., potential of product. and firm's experience.

Moreover, in col. 4 and col. 5, we find that a firm's willingness to bribe is more important in a country with low government effectiveness whatever the level of endemic corruption. For instance, a firm considering corruption climate as being a very severe impediment for their business, in a country with low government effectiveness, has a propensity to bribe of about 47 percent whereas the same sort of firm (all things being equal) has only a propensity to bribe of about 19 percent in a country with high government effectiveness.

Moreover, in col. 6 and col. 7, we find that judicial efficiency seems to condition the effects of endemic corruption on a firm's practical demand for good governance. In fact, despite the severe impact of the corruption climate on their business, firms in countries with a high index of the rule of law has a propensity to bribe of about 17 percent, unlike the same sort of firms in low judicial efficiency countries (44 percent).

Besides, in col. 8 and col. 9, we find that in common law countries, firms are more likely to bribe whatever the level of pervasive corruption. Contrary to the firm's willingness to comply, some common law features may strengthen the increasing effects of the pervasiveness of corruption on the practical demand for good governance. These results highlight that some civil law characteristics allow of dampening the increasing effects of endemic corruption on firms' petty corruption whereas common law origins reinforce this increasing effect.

### **5.3 Evidence in the environmental field**

We now turn to testing the influence of the pervasiveness of corruption in the environmental field by focusing on environmental bribe payments. While looking at the specific case of corruption related to a firm's environmental compliance, we try to check evidences about the environmental overcompliance of manufacturing firms by estimating the effects of endemic corruption on bribe payments in different regulations.

In Table 7, we find that the level of a firm's petty corruption is less influenced by pervasive corruption in the case of environmental regulations than in other regulation fields. For instance, firms considering endemic corruption as being a very severe obstacle have a propensity of about 11 percent to bribe environmental officials whereas in the case of fiscal regulation the same firms have a propensity of about 24 percent (17 percent in the case of fire/building safety and sanitary regulations, and 13 percent in the labor regulation case). These results highlight that firms are less likely to bribe environmental regulators than other regulators, reinforcing evidence of better governance practices in the environmental field.



Table 7: Endemic Corruption and Firm's Bribe Payments in Different Regulations

Depend. Variable: Bribe Payment	Environment		Fiscal		Labor		Fire and Building Safety		Sanitary	
Independ. Variable: Corruption Climate	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>Estimate Coefficients</b>										
Minor Obstacle	0.729*** (0.108)	0.342 (0.291)	0.682*** (0.104)	0.35** (0.178)	0.17 (0.116)	-1.109 (0.092)	0.661*** (0.126)	0.206 (0.284)	0.579*** (0.129)	0.077 (0.161)
Moderate Obstacle	1.058*** (0.108)	1.010*** (0.197)	0.969*** (0.11)	0.828*** (0.296)	0.479** (0.193)	0.007 (0.209)	0.881*** (0.143)	0.643 (0.438)	0.849*** (0.162)	0.491 (0.343)
Major Obstacle	1.299*** (0.159)	1.010*** (0.28)	1.150*** (0.146)	0.882** (0.364)	0.561*** (0.155)	0.19 (0.32)	1.106*** (0.155)	0.723* (0.383)	1.100*** (0.176)	0.676* (0.369)
Very Severe Obstacle	1.303*** (0.172)	1.155*** (0.289)	1.249*** (0.158)	1.336*** (0.298)	0.883*** (0.159)	0.879*** (0.278)	1.258*** (0.203)	1.367*** (0.499)	1.202*** (0.199)	0.99*** (0.327)
Const.	-1.289*** (0.115)	-17.862** (7.890)	-1.893*** (0.002)	-6.413 (5.584)	-1.698*** (0.094)	-9.519** (4.271)	-9.980*** (0.13)	-5.605 (6.197)	-7.734*** (0.149)	-8.59 (5.804)
<b>Estimate Probabilities</b>										
No Obstacle	0.113*** (0.00843)	0.0398*** (0.00643)	0.152*** (0.00934)	0.0785*** (0.0165)	0.103*** (0.00939)	0.0591*** (0.00991)	0.127*** (0.0119)	0.0495*** (0.0148)	0.117*** (0.0124)	0.0696*** (0.0146)
Minor Obstacle	0.209*** (0.0108)	0.0552*** (0.00914)	0.262*** (0.0110)	0.108*** (0.00910)	0.119*** (0.00819)	0.0534*** (0.00514)	0.219*** (0.00836)	0.0601*** (0.00635)	0.192*** (0.00960)	0.0747*** (0.0108)
Moderate Obstacle	0.269*** (0.0110)	0.102*** (0.0131)	0.322*** (0.0109)	0.163*** (0.0126)	0.156*** (0.0140)	0.0595*** (0.00488)	0.259*** (0.0101)	0.0901*** (0.0115)	0.237*** (0.0122)	0.109*** (0.0141)
Major Obstacle	0.319*** (0.0206)	0.102*** (0.0152)	0.362*** (0.0187)	0.171*** (0.0230)	0.167*** (0.0118)	0.0706*** (0.0117)	0.305*** (0.0153)	0.0969*** (0.0101)	0.286*** (0.0147)	0.128*** (0.0184)
Very Severe Obstacle	0.320*** (0.0301)	0.116*** (0.0203)	0.385*** (0.0235)	0.245*** (0.0205)	0.217*** (0.0160)	0.131*** (0.0127)	0.338*** (0.0278)	0.170*** (0.0282)	0.307*** (0.0230)	0.168*** (0.0171)
Control for Enterprise's Features	no	yes	no	yes	no	yes	no	yes	no	yes
Obs.	8 172	2 442	18 469	4 536	9 114	3 502	9 900	3 390	8 835	3 264
Log-Likelihood	-3 837.231	-709.08	-8 764.849	-1 816.629	-3 674.729	-1 063.779	-4 950.723	-1 172.333	-4 211.137	-1 157.882
# Countries	34	28	66	36	35	18	35	31	39	31

Control for industry, country and time fixed effects. Observations clustered by countries. Robust Standard Errors in parentheses.

Firm's Features: size, ownership, export., legal status, educ. of manager, part of the national market, memb. of a business assoc., potential of product. and experience of the firm.

## 6 Conclusion

This paper investigated (i) whether the firms' perception of endemic corruption could influence their demand for good governance as well as (ii) whether the effects of endemic corruption are conditioned on a country's institutional features and (iii) whether there are specificities in the environmental field.

We found, from the World Bank Enterprise Survey in developing countries, that the perception of pervasive corruption is an important factor in a firm's demand for good governance. Our results also suggest that corruption climate effects are conditioned on country's institutional features and that a firm's environmental petty corruption is less influenced by endemic corruption than other bribe payments.

Two final points are, first, that a low level of endemic corruption is an important factor in a low demand for good governance, suggesting that corruption or bad stakeholder behavior in terms of governance could become an optimal second best strategy in more corrupt societies. This result implies that as a first step to increase the demand for good governance, a condition of sustainable development, governance reforms policies have to consider corruption as a systemic phenomenon. Second, the persistent effects of endemic corruption could be weakened by a better institutional framework. In fact, we show (i) that in countries with high government effectiveness or high judicial efficiency as well as in common law countries, the willingness to comply is less influenced by corruption pervasiveness, and (ii) that in more stable political regimes, in countries with high judicial efficiency or high government effectiveness as well as in civil law countries, bribe payments are also less influenced by endemic corruption. To deal with the problem of persistent endemic corruption, good governance policy has to focus on the role of the institutional background and so to rethink the supply of good governance by reconciling it with the demand side.

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## A List of Countries

Table 8: List of Countries

Country Name	Number of Firms	Samples		Country Name	Number of Firms	Samples	
		Compliance	Bribe Payments			Compliance	Bribe Payments
Albania	179	×	×	Algeria	541	×	
Angola	215		×	Armenia	315	×	×
Azerbaijan	319	×	×	Bangladesh	1 001	×	×
Belarus	247	×	×	Benin	196	×	×
Bolivia	455		×	Bosnia	168	×	×
Brazil	1 641	×	×	Bulgaria	531	×	×
Burkina Faso	50		×	Burundi	102		×
Cambodia	186	×	×	Cameroon	110		×
Cape Verde	39		×	China	2 629	×	×
Colombia	731		×	Congo. Dem. Rep.	149		×
Dominican Rep.	173	×	×	Ecuador	867	×	×
Egypt	977		×	El Salvador	965	×	×
Gambia	47		×	Georgia	103	×	×
Guatemala	809	×	×	Guinea	142		×
Guyana	163	×	×	Honduras	767	×	×
India	4 073	×	×	Indonesia	713	×	×
Jamaica	79	×	×	Jordan	387		×
Kazakhstan	509	×	×	Kenya	282	×	×
Kyrgyz Rep.	253	×	×	Lao PDR	246	×	×
Lesotho	75	×	×	Macedonia	130	×	×
Madagascar	293	×	×	Malawi	160	×	×
Mali	154	×	×	Mauritania	80		×
Moldova	371	×	×	Mongolia	193	×	
Montenegro	58	×		Morocco	839	×	
Namibia	117		×	Nicaragua	836	×	×
Niger	59		×	Pakistan	914	×	
Paraguay	470		×	Peru	957	×	×
Philippines	716	×	×	Romania	521	×	×
Russia	208	×	×	Senegal	257	×	×
Serbia	232	×	×	Serbia/Montenegro	194	×	×
South Africa	584	×	×	Sri Lanka	451	×	×
Swaziland	102		×	Syria	549		×
Tajikistan	258	×	×	Tanzania	565	×	×
Turkey	184	×	×	Uganda	631	×	×
Ukraine	448	×	×	Uzbekistan	299	×	×
Vietnam	1 434	×	×	West Bank/Gaza	354		×
Zambia	188	×					

## B Descriptive statistics

Table 9: Summary statistics

Variable	Mean	(Std. Dev.)	Min.	Max.	N
Firm's Demand for Good Governance					
Compliance (1 = Comply)	0.73	(0.44)	0	1	23 376
Bribe (1 = Paying Bribe)	0.41	(0.49)	0	1	23 014
Bribe for Environmental Purposes (1 = Paying Bribe)	0.29	(0.45)	0	1	9 112
Bribe for Fiscal Purposes (1 = Paying Bribe)	0.34	(0.47)	0	1	19 530
Bribe for Sanitary Purposes (1 = Paying Bribe)	0.26	(0.44)	0	1	9 927
Bribe for Labor Purposes (1 = Paying Bribe)	0.23	(0.42)	0	1	9 702
Bribe for Fire Purposes (1 = Paying Bribe)	0.31	(0.46)	0	1	10 781
The Pervasiveness of Corruption					
Corruption Climate (0 = No impact, 4 = Very Severe)	1.46	(1.53)	0	4	34 405
No Obstacle (1 = <i>Yes</i> )	0.43	(0.5)	0	1	34 405
Minor Obstacle (1 = <i>Yes</i> )	0.13	(0.34)	0	1	34 405
Moderate Obstacle (1 = <i>Yes</i> )	0.13	(0.34)	0	1	34 405
Major Obstacle (1 = <i>Yes</i> )	0.14	(0.35)	0	1	34 405
Very Severe Obstacle (1 = <i>Yes</i> )	0.16	(0.36)	0	1	34 405
Firm's Features					
Business Association (B.A) (1 = <i>Yes</i> )	1.39	(0.49)	1	2	27 145
Industry dummy=1: Textile (1 = Yes)	0.27	(0.44)	0	1	37 199
Industry dummy=2: Agro-industry (1 = Yes)	0.19	(0.39)	0	1	37 199
Industry dummy=3: Wood and Paper (1 = Yes)	0.09	(0.28)	0	1	37 199
Industry dummy=4: Other (1 = Yes)	0.45	(0.5)	0	1	37 199
Ownership dummy (1 = Foreign, 2 = Domestic)	1.88	(0.33)	1	2	36 785
Exporter dummy (1 = Yes)	1.77	(0.42)	1	2	36 322
Firm Size dummy (1 = Small, 2 = Medium, 3 = Large)	1.94	(0.79)	1	3	33 076
Educ. of manager (1 = No compl. 2 <sup>nd</sup> school, 6 = Post grad. degree)	4.24	(1.46)	1	6	22 453
Publicly listed company (1 = Yes)	0.08	(0.27)	0	1	25 294
Private held, limited company (1 = Yes)	0.42	(0.49)	0	1	25 294
Cooperative (1 = Yes)	0.04	(0.2)	0	1	25 294
Sole proprietorship (1 = Yes)	0.19	(0.4)	0	1	25 294
Partnership (1 = Yes)	0.12	(0.32)	0	1	25 294
Other Legal Status (1 = Yes)	0.15	(0.35)	0	1	25 294
Capacity Utilization	71.49	(22.39)	0	150	34 456

Authors' Calculations

Table 10: Summary statistics (2)

Variable	Mean	(Std. Dev.)	Min.	Max.	N
Country's Level Variables					
All Sample					
Political Stability (-2.5 to 2.5)	-0.61	(0.58)	-2.55	0.92	37 199
Government Effectiveness (-2.5 to 2.5)	-0.36	(0.39)	-2.01	2.22	36 673
Rule of Law (-2.5 to 2.5)	-0.45	(0.39)	-2.19	2	28 444
Sample: All Firms with <i>Comply</i> $\neq$ No Obs.					
Political Stability (-2.5 to 2.5)	-0.63	(0.55)	-1.59	0.86	23 376
Government Effectiveness (-2.5 to 2.5)	-0.34	(0.36)	-1.15	0.75	23 094
Rule of Law (-2.5 to 2.5)	-0.43	(0.38)	-1.24	0.23	18 703
Sample: All Firms with <i>Bribe</i> $\neq$ No Obs.					
Political Stability (-2.5 to 2.5)	-0.57	(0.57)	-2.55	0.92	23 014
Government Effectiveness (-2.5 to 2.5)	-0.38	(0.38)	-1.61	0.75	22 876
Rule of Law (-2.5 to 2.5)	-0.48	(0.36)	-1.24	0.23	15 901
Sample: All Firms with <i>BribeEnv</i> $\neq$ No Obs.					
Political Stability (-2.5 to 2.5)	-0.53	(0.59)	-1.55	0.4	9 112
Government Effectiveness (-2.5 to 2.5)	-0.41	(0.37)	-1.15	0.75	9 112
Rule of Law (-2.5 to 2.5)	-0.63	(0.33)	-1.24	0.16	5 473
Sample: All Firms with <i>BribeTax</i> $\neq$ No Obs.					
Political Stability (-2.5 to 2.5)	-0.57	(0.58)	-2.55	0.92	19 530
Government Effectiveness (-2.5 to 2.5)	-0.4	(0.38)	-1.61	0.75	19 398
Rule of Law (-2.5 to 2.5)	-0.52	(0.35)	-1.24	0.23	12 873
<i>BribeEnv</i> and <i>BribeTax</i> are the bribe payments for, respectively, environmental and fiscal purposes.					
Authors' Calculations					